

PROPER USE GUIDELINES

Cumulative Trauma Disorders can result from the prolonged use of manually powered hand tools. AMP hand tools are intended for occasional use and low volume applications. AMP offers a wide selection of powered application equipment for extended-use, production operations.

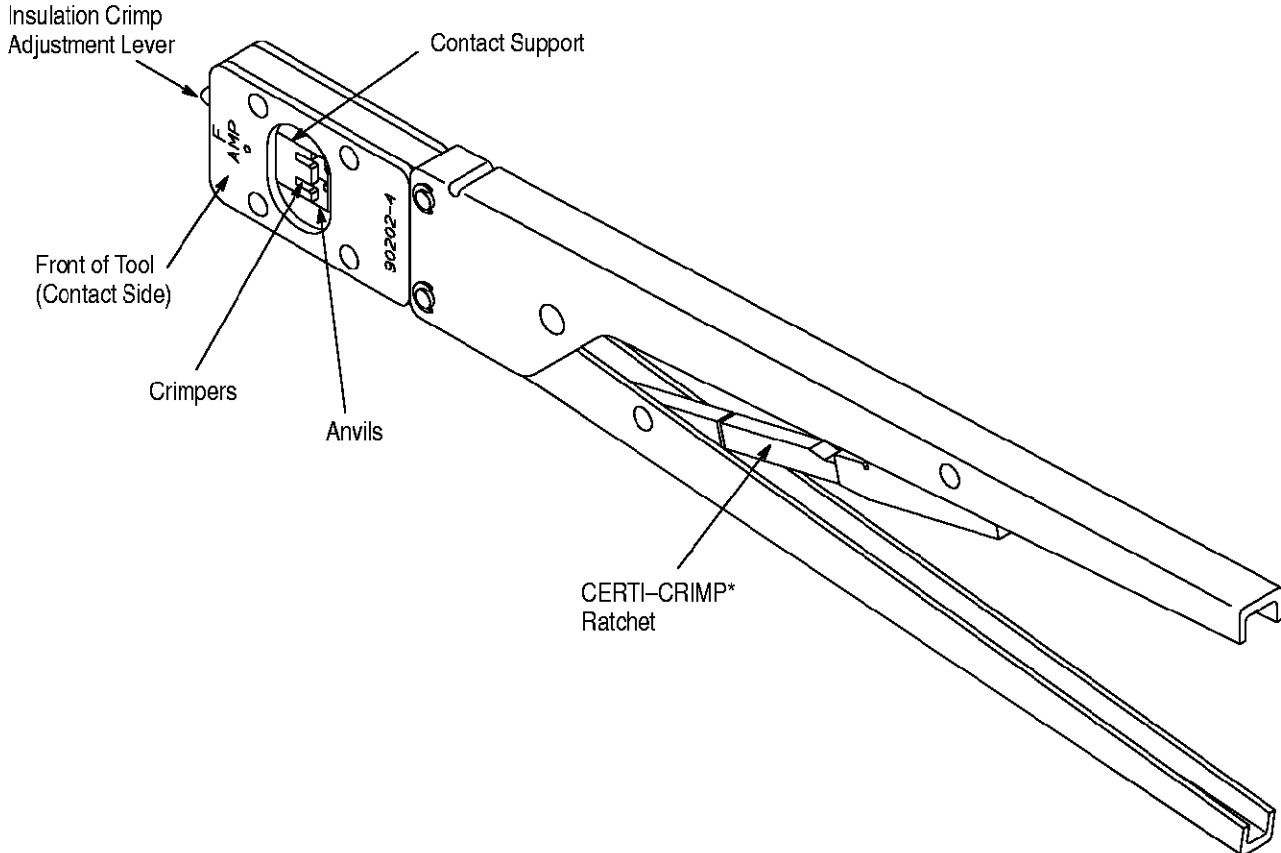


Figure 1

1. INTRODUCTION

This instruction sheet covers the use of AMP* Hand Crimping Tool 90202-4, which is designed for crimping the AMPMODU* MOD IV, MOD IV 1/2, and MOD V loose-piece (LP) contacts listed in AMP Catalog 65816 and shown in Figure 2. The tool also crimps 24-20 AWG Tandem Spring Contacts 166722-[] and 166500-[]. Read these instructions thoroughly before crimping any contacts.

NOTE

All dimensions on this document are in metric units [with U.S. customary units in brackets]. Figures and illustrations are for identification only and are not drawn to scale.

The tool features two fixed dies (crimpers), two moveable dies (anvils), an insulation crimp adjustment lever, a contact support, a wire hold-down, a locator/insulation stop, an ejector, and a CERTI-CRIMP ratchet.

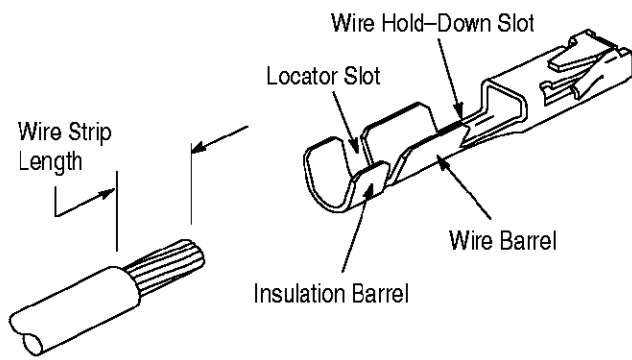
The insulation crimp adjustment lever is used to regulate the crimp height of the contact insulation barrel. For detailed information on using the insulation crimp adjustment lever, refer to Section 4, INSULATION CRIMP ADJUSTMENT.

The contact support prevents the contact from bending during the crimping operation.

2. DESCRIPTION (Figures 1 through 3)

The front (contact side) of the tool has the tool number marked on it. The back (wire side) of the tool has the wire size marked above each crimp section.

The wire hold-down forces the wire to the bottom of the wire barrel during crimping of the contact in the "30-26" crimping section. In use, it rests in the wire hold-down slot.



AMP Catalog	Wire Size Range (AWG)	Max Wire Insul Dia. mm [in.]	Wire Strip Length mm [in.]	Crimp Section Marking
65816	30 to 26	1.22 [.048]	3.96 [.156]	30 - 26
	24 to 20	1.75 [.069]	4.34 [.171]	24 - 20

Figure 2

The locator/insulation stop has two functions. First, it positions the contact between the crimping dies, and second, it aids in locating the wire in the contact. In use, it rests in the contact locator slot.

The ejector pulls the locator down and ejects the crimped contact when the tool handles are fully opened.

The CERTI-CRIMP ratchet ensures full crimping of the contact. Once engaged, the ratchet will not release until the handles have been fully closed.

3. CRIMPING PROCEDURE

1. Refer to the table in Figure 2, select a wire of the specified size and insulation diameter, and strip the wire to the dimension provided. Do NOT nick or cut the wire strands.
2. Select an applicable loose-piece contact and identify the appropriate crimp section according to the markings on the back of the tool. See Figure 3.
3. Hold the tool so that the back (wire side) of the tool is facing you.
4. Make sure that the ratchet is released. Squeeze the tool handles together and allow them to open fully.
5. Looking straight into the back of the tool, insert the contact (insulation barrel first) into the front of the appropriate crimp section. Position the contact in the crimpers so that the locator enters the contact's locator slot.
6. Hold the contact in position and squeeze the tool handles together until the insulation anvil starts entry into the insulation crimper. Do NOT deform the insulation barrel or the wire barrel.

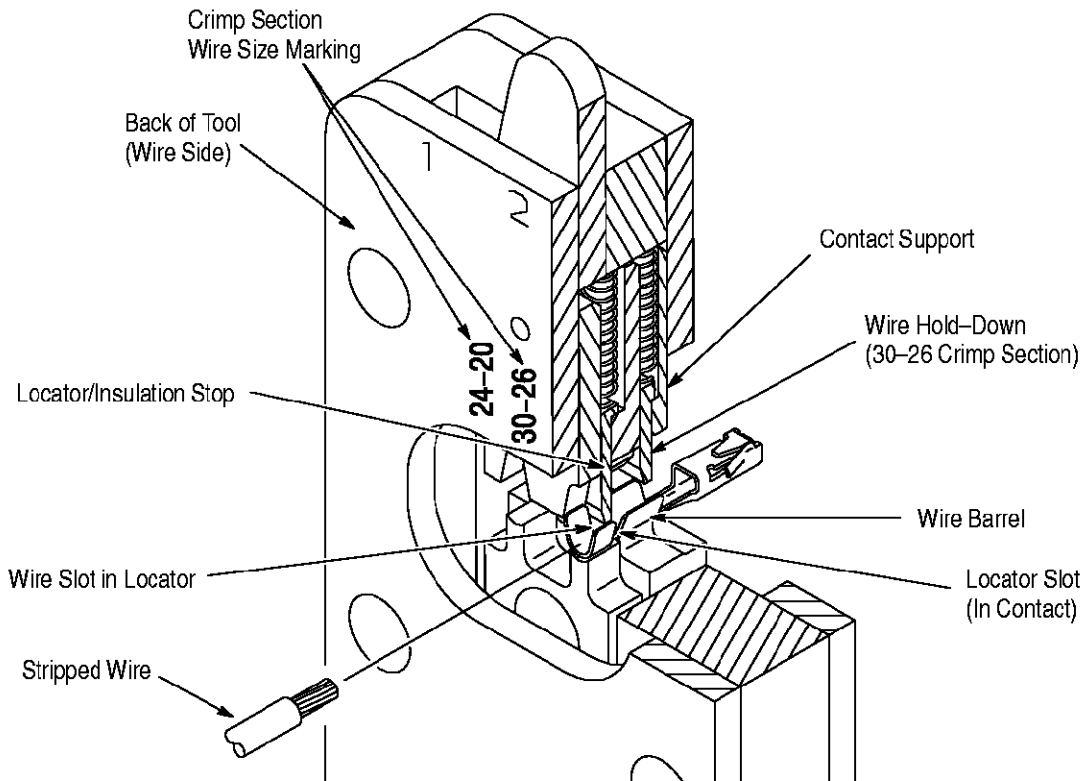


Figure 3

7. Insert a properly-stripped wire through the wire slot and into the contact's wire barrel until the wire insulation butts against the locator/insulation stop.

NOTE *Special precautions must be taken when inserting a wire into a contact crimped in the tool section marked "30-26." The stripped wire must rest on the bottom of the wire barrel, and the end of the wire must be under the wire hold-down. For information concerning this Crush Crimp, refer to AMP Instruction Sheet 408-7497.*

8. While holding the wire in place, squeeze the tool handles together until the ratchet releases.

9. Allow the tool handles to open fully so that the ejector can push the contact out of the crimpers. Remove the crimped contact from the tool.

4. INSULATION CRIMP ADJUSTMENT

The insulation barrel crimp height is regulated by the insulation-adjustment lever. To determine the proper setting, test-crimp a contact using the setting that approximates the insulation size (1 for small, 2 for medium, and 3 for large). If the crimped insulation barrel is too tight or too loose, change the setting accordingly. The crimp should hold the insulation firmly without cutting into the insulation material.

5. MAINTENANCE/INSPECTION

5.1. Daily Maintenance

Remove all foreign particles with a clean, soft brush or a clean, soft, lint-free cloth. Make sure the proper retaining pins are in place and are secured with the proper retaining rings. If foreign matter cannot be removed easily, or if the proper replacement parts are not available, return the tool to your supervisor.

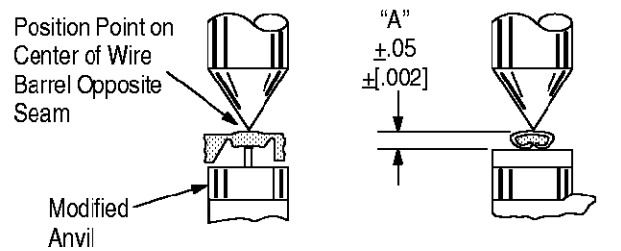
Make sure all pivot points and bearing surfaces are protected with a thin coat of any good SAE 20 motor oil. Do NOT oil excessively. When the tool is not in use, keep the handles closed to prevent objects from becoming lodged between the dies, and store the tool in a clean, dry area.

5.2. Periodic Inspection

Regular inspection should be performed by quality control personnel. A record of scheduled inspections should remain with the tool and/or be supplied to the supervisory personnel responsible for the tool. Though recommendations call for at least one inspection a month, the inspection frequency should be based on the amount of use, ambient working conditions, operator training and skill, and established company standards. These inspections should be performed in the following sequence:

A. Visual Inspection

1. Remove all lubrication and accumulated film by immersing the tool (handles partially closed) into a suitable degreaser that will not affect paint or plastic material.
2. Make certain all retaining pins are in place and are secured with the proper retaining rings. If replacements are necessary, refer to Figure 5.
3. Close the tool handles until the ratchet releases, and then allow the handles to open freely. If they do not open quickly and fully, then the spring is defective and must be replaced (see Section 6, REPAIR/REPLACEMENT).
4. Inspect the head assembly, with special emphasis on checking for worn, cracked, or broken crimping dies. If damage to any part of the head is evident, return the tool to AMP for evaluation and repair (see Section 6, REPLACEMENT AND REPAIR).



FOR LOOSE PIECE CONTACTS SEE AMP CATALOG	WIRE SIZE (AWG, Max)	CRIMP SECTION MARKING	CRIMP HEIGHT DIMENSION "A"
65816	30 to 26	30 - 26	.686 [.0270]
	24 to 20	24 - 20	.775 [.0305]

Figure 4

B. Crimp Height Inspection

This inspection requires the use of a micrometer, with modified anvil, as shown in Figure 4. AMP recommends the modified micrometer (Crimp Height Comparator RS-1019-5LP) available from:

Shearer Industrial Supply Co. VALCO
 20 North Penn Street or 1410 Stonewood Drive
 York, PA 17401-1014 Bethlehem, PA 18017-3527

To measure the crimp height:

1. Refer to Figure 2, select a contact and a wire (maximum size) for each crimp section listed in the table.
2. Crimp the contact(s) according to the procedures provided in Section 3, CRIMPING PROCEDURE.

3. Using the crimp height comparator, measure the wire barrel crimp height as shown in Figure 4. If the crimp height conforms to the dimensions provided in Figure 4, then the tool is considered dimensionally correct. If the crimp height does not conform to the dimensions provided, return the tool to AMP for evaluation and repair (refer to Section 6, REPLACEMENT AND REPAIR).

For additional information concerning the use of the crimp height comparator, refer to AMP Instruction Sheet 408-7424.

C. CERTI-CRIMP Ratchet Inspection

Obtain a 0.025-mm [.001-in.] shim that is suitable for checking the clearance between the bottoming surfaces of the crimping dies. To inspect the ratchet, proceed as follows:

1. Select a contact, wire (maximum size), and locate the proper crimp section of the tool.
2. Position the contact in the tool, as described in Paragraph 3, CRIMPING PROCEDURE, Steps 1 through 4. While holding the wire in place, squeeze the tool handles together until the ratchet releases. Hold the tool handles in this position, maintaining just enough pressure to keep the dies closed.
3. Check the clearance between the bottoming surfaces of the dies. If the clearance is 0.025 mm [.001 in.] or less, then the ratchet is satisfactory. If

the clearance exceeds 0.025 mm [.001 in.], the ratchet is out of adjustment and must be repaired. Refer to Section 6, REPLACEMENT AND REPAIR.

If the tool conforms to these inspection procedures, lubricate it with a THIN coat of any good SAE 20 motor oil and return it to service.

6. REPLACEMENT AND REPAIR

The parts listed in Figure 5 are customer-replaceable. A complete inventory can be stocked and controlled to prevent lost time when replacement of parts is necessary. Order replacement parts through your AMP representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 1-717-986-7605, or write to:

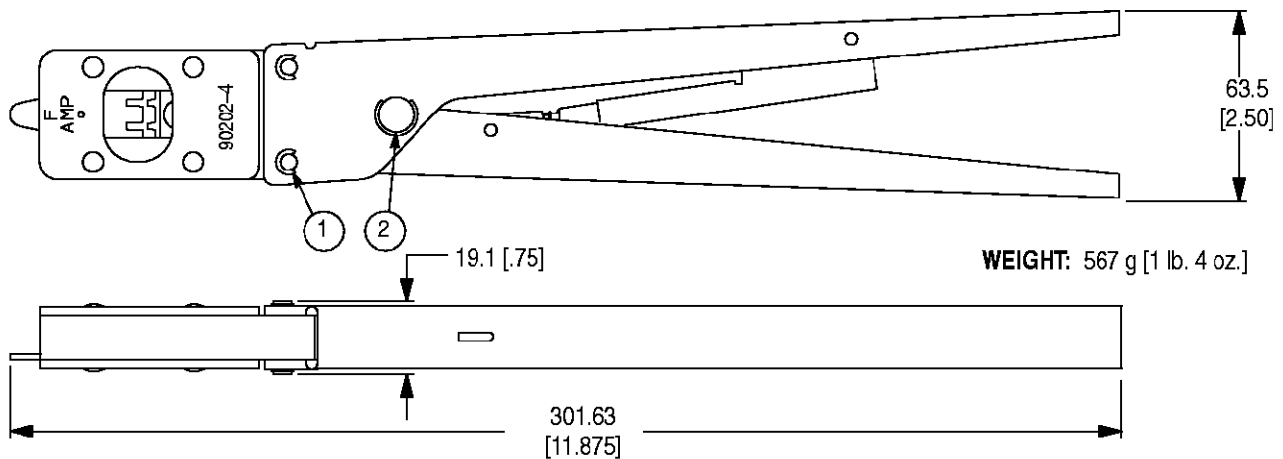
CUSTOMER SERVICE (38-35)
AMP INCORPORATED
P.O. BOX 3608
HARRISBURG, PA 17105-3608

Tools may also be returned to AMP for evaluation and repair. For tool repair service, contact an AMP representative at 1-800-526-5136.

7. REVISION SUMMARY

Per EC 0990-0989-99:

- Initial release of instruction sheet



CAUTION Do not remove the retaining pins or permanent damage to the tool may result (See Section 6).

REPLACEMENT PARTS

ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	21045-3	RING, Retaining	4
2	21045-9	RING, Retaining	2

Figure 5